REMARKS

Claims 1-14 are pending and have been rejected under 35 U.S.C. § 103(a). Those rejections are respectfully traversed. Applicants believe all claims are in a condition for allowance and respectfully request reconsideration and withdrawal of all rejections under 35 U.S.C § 103(a).

1. Finality of the Office Action is Improper

The Office states that the Applicants' amendments necessitated the new ground of rejection presented in this Office Action, the new ground of rejection being newly cited reference U.S. Patent Application Publication 2003/0126056 to Hausman et al. (hereinafter, "Hausman"). Applicants submit that the finality of the present Office Action is improper. MPEP § 706.07(a) provides the following guidelines on when finality of an Office Action is proper:

> Under present practice, second or any subsequent actions on the merits shall be final, *except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment* of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). (Emphasis added.)

The rejection of Claims 1-14 under 35 U.S.C. § 103(a) was not necessitated by Applicants' amendment of the claims. In the previous Amendment filed March 14, 2008, the amendments to Claim 1 were in form, rather than in substance, to provide proper antecedent basis and to more clearly recite the patentable subject matter. They did not add any new claimed subject matter.

For example, in the preamble of Claim 1, the phrases "initial processing" and "a set of" were simply moved. Further, the phrase "received from a streaming data interface" was deleted from the preamble of Claim 1 as already later recited in the first element of the claim. In the first element of Claim 1, the phrase "for receiving" was replaced by "arranged to receive" to more clearly set out the patentable subject matter. In the second element of Claim 1, the phrase

"arrange for temporarily storing" was amended to recite "arranged to temporarily store" to more clearly set out the patentable subject matter. In the third element of Claim 1, the phrases "the data engine for determining," "for processing," and "for asserting" were simply respectively replaced with the phrases "determine," "process," and "to assert." Further, the phrases "assembled into" and "arranged" were added to more clearly set out the patentable subject matter, as set out in other elements of Claim 1. In the fourth element of Claim 1, the phrases "for assembling" and "for preventing such tuple" were also respectively replaced with "arranged to assemble" and "to prevent the output tuple" to more clearly set out the patentable subject matter. Further, the phrase "from the output FIFO to the memory of the JPU" was amended to recite "for further processing by the JPU" to reflect the claim language used in the third element of Claim 1. In the fifth element of Claim 1, the phrase "temporarily storing them" was simply replaced with the phrase "arranged to temporarily store" to more clearly set out the patentable subject matter.

Further, Claims 5 and 6 were solely amended to similarly reflect the previous amendment of Claim 1, upon which they depend, changing the phrase "use/lose" to "use or lose" to provide a proper antecedent basis commensurate with amendments to Claim 1 presented on August 17, 2007.

The claimed subject matter did not substantively change as a result of the Amendment filed March 14, 2008. Other than these formal text replacements, no substantive additions were made to any claim. Therefore, the claims are of the same scope as prior to the Amendment. Further, it logically follows that the *arguments regarding the substance*, rather than the *amendments in form*, of the claims were indeed persuasive and necessitated the withdrawal of the prior art rejections presented in the Office Action of November 14, 2007.

Based upon the Examiner's comments regarding Hausman and the present invention in the most recent Office Action, it appears that the applicants' previous amendment bears little relation to the grounds for the rejection of Claims 1-14 under 35 U.S.C. § 103(a). Despite the amendments in form to Claim 1, Hausman could have been cited in rejecting the claims in any of the previous four Office Actions. Hausman was introduced into the rejections under 35 U.S.C. § 103(a) for teachings of "a streaming data source..., a streaming interface arranged to temporarily store streaming data from the streaming data interface..., a data engine..., a tuple generator...; and an output device...," as stated on page 5 of the Office Action. However, as discussed above,

all elements of Claim 1 as revised in the Amendment filed March 14, 2008 were present in Claim 1 prior to submission of the Amendment and, in fact, since filing of the application. No new issues under 35 U.S.C. § 103(a) could have been raised by the Applicants' Amendment. Specifically, any reasons associated with Hausman that would render the examined claims obvious would likewise have rendered the previous claims obvious, because all limitations present in pending Claims 1-14 were also present in the claims at the time of filing. In fact, the details of the Office Action assert that Hausman teaches certain limitations, all of which were previously recited in the claims. Accordingly, the new ground of rejection relied upon by the Office could not have been necessitated by the Applicants' Amendment to the claims.

Applicants respectfully submit that the Amendment filed March 14, 2008 did not necessitate the new grounds for rejection and that the Examiner's present rejection of Claim 1, and all claims that depend from it, represents a new rejection to previously-existing subject matter in the claim improperly made final. Further, the Office Action fails to state that the finality of the present Office Action was necessitated by Applicants' Amendment (Form paragraph 7.40 should be used where an action is made final including new grounds of rejection necessitated by applicant's amendment. MPEP § 706.07(a)). Rather, the Office Action summarily states on page 2, "In the Amendment filed 17 march 2008, claims 1, 5 and 6 are amended. This action is made Final...The prior art rejections presented in the Non-Final Rejection mailed on 14 November 2007 have been withdrawn as necessitated by the amendment." However, as shown above, Applicant's amendments did not necessitate the new grounds of rejection. Therefore, the finality of the present Office Action is clearly improper. For this reason, Applicants respectfully request that the finality of the Office Action be reconsidered and withdrawn, and that consideration of the remainder of this Amendment not be restricted by after-final practice.

2. Piecemeal Examination

In view of the previous four Office Actions, the recent mailing of this most recent Office Action maintaining a rejection under 35 U.S.C. § 103(a) is a cause of concern to Applicants regarding the pace of prosecution. Piecemeal examination should be avoided as much as possible. MPEP § 707.07(g). The examiner ordinarily should reject each claim on all valid

grounds available, avoiding, however, undue multiplication of references. See MPEP § 904.03.
Raising this rejection citing yet another prior art reference, not necessitated by amendment, to be
combined with U.S. Patent 6,434,649 to Baker et al. (hereinafter, "Baker") so late in prosecution
is, in effect, piecemeal prosecution and extremely prejudicial to Applicants.

3. Discussion of Example Embodiments of the Present Invention

Without limitation to the claims, example embodiments of the present invention are
directed to a Programmable Streaming Data Processor (PSDP) which is arranged to perform
primitive functions directly on data received from a streaming data interface. The PSDP
processes data from a streaming data source, such as a disk drive, prior to its being forwarded to
a central processing unit (CPU) of a more general processor. The PSDP performs certain
preliminary processing in order to reduce the computational load on the local CPU.

The PSDP may have processing logic known as a Data Engine that is capable of
examining fields of a record to determine whether a record will or will not be passed to the CPU
of the JPU as an output tuple. An output tuple is comprised of the fields of the source record
from the disk that are to be selected for further processing by the CPU and PSDP generated
fields. For example, a record retrieved from disk consists of a record header, typically
containing more than one header field, and at least one data field, and typically, many data fields
for each record. The collection of fields selected for return to the CPU as a result of processing a
record is referred to as a tuple. Possible tuple fields include various record header fields, the
PSDP generated record address, unmodified record data fields, a hash field, and tuple status and
length information. Boolean results and/or scratch pad words may also form parts of tuples.
Most often a tuple will be shorter than the record that was used to generate it, but it may be
longer, depending upon the program that is provided to the PSDP.

As data streams out of the filter, an output tuple is formed in a First In, First Out (FIFO)
memory, in a way that permits aborting the tuple if the filter logic determines that the particular
tuple should not be passed on to the CPU. Specifically, in an example embodiment, the memory
FIFO has two write pointers, an "active" write pointer and a "visible" write pointer. The visible
pointer maintains a position indicating a boundary of the last accepted tuple. Meanwhile, the
active write pointer moves along the memory FIFO from the boundary, as words of the next

possible tuple become available. As the PSDP logic determines that a tuple is not to be used, such as a result of the filter or TID processing described above, the memory FIFO's active write pointer resets by moving back to the visible write pointer location. This has the effect of ignoring the intervening fields of the unwanted tuple and allowing them to be overwritten. If the PSDP logic makes this determination while the active pointer is still pointed to a field within the unwanted tuple, the active pointer will simply reset to the visible pointer location until the last field within that unwanted tuple has been overwritten. If, on the other hand, the PSDP logic determines that a tuple is to be used, the visible pointer moves to the active pointer position, having the effect of keeping all intervening fields of the tuple that should be kept.

4. Rejections Under 35 U.S.C. § 103(a)

Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Baker in view of Hausman (hereinafter, "Baker/Hausman"). Applicants traverse this rejection based on the Examiner's continued failure to establish a prima facie case of obviousness based on the cited references. Baker and Hausman, individually or in combination, do not disclose or suggest all of the elements of the independent claim.

Baker relates to a data processor, and more specifically to a data transfer arrangement mechanism employed to transfer data to various components within a data processor. Such a multimedia processor and data transfer arrangement are directed to processing computer graphics and graphics on a standalone gaming console.

Hausman relates to distribution of financial data. Users of terminals in a computer system select data from feeds provided over the network. The data may be used in data-requesting programs accessed at the terminals. Data identified for distribution to applications are mapped into forms specified by the users, such as by modifying identifiers such as record type tags associated with the data according to user specifications, modifying the order and/or format of individual data elements included in data records, deleting portions of records, associating portions of individual records with each other, and assigning to data records specific addresses within data structures useable by the applications for which the data records are mapped.

5. The Examiner Fails to Meet the Burden of Showing a Prima Facie Case of Obviousness

The Examiner bears the burden of establishing a prima facie case of obviousness. In order for the Examiner to cite combined prior art references in support of a prima facie case of obviousness, all claim limitations must be considered. "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP § 2143.03, citing In re Watson, 424 F.2d 1382, 1385. Because multiple elements of Claim 1 are not found in the references, the rejection should be withdrawn.

The Office Action relies on Hausman for the further limitations of a data engine and a tuple generator. However, Hausman fails to disclose all the above limitations and does not overcome the deficiencies of the Baker. None of paragraphs [0045], [0048] or [0057] teach a data engine arranged to determine field boundaries in the data from the streaming data interface and process fields to select one or more fields to be assembled into output tuples. Rather, these paragraphs relate to routing of whole data records, not fields within the data records, from the data source to individual users. There is no intrinsic teaching or suggestion in Baker/Hausman to determine field boundaries in a record and process those fields to select one or more of them to be assembled into output tuples, let alone any mention of tuples.

Further, paragraphs [0045], [0048] and [0057] also fail to teach the data engine containing logic arranged to determine whether an output tuple is to be selected for further processing by additional JPUs. There is no mention of any sort of decision-making regarding further processing, let alone a mention of a tuple. The rejection is also deficient for failing to cite any prior art teaching or suggesting "asserting a use or lose decision value according to that determination" (i.e., the determination of whether an output tuple is to be selected for further processing by additional JPUs). There is no intrinsic teaching or suggestion in Baker/Hausman to so assert or determine. Certainly there is no explicit teaching or suggestion in Baker/Hausman to so assert or determine.

Moreover, Baker/Hausman fails to teach a tuple generator, let alone output tuples. The records of Hausman are not tuples. There is no notion in Baker/Hausman of an output tuple comprised of the fields of the source record from the disk that are to be selected for further processing by the CPU and PSDP generated fields. For example, a record retrieved from disk consists of a record header, typically containing more than one header field, and at least one data

field, and typically, many data fields for each record. The collection of fields selected for return to the CPU as a result of processing a record is referred to as a tuple.

The Baker/Hausman combination does not overcome the deficiencies of Baker. Baker/Hausman does not teach a data engine for determining field boundaries in output data from the streaming interface FIFO and for processing fields to select one or more fields to be output tuples, or a tuple generator for assembling fields into the output tuple. Baker/Hausman also fails to teach, at paragraph [0071] an output device arranged to temporarily store tuples prior to conditionally forwarding them to the JPU. For any of these reasons, the aforementioned features of independent Claim 1 cannot reasonable be said to be present in the asserted combination of Baker/Hausman. Therefore, the rejections are traversed and therefore should be withdrawn. Reconsideration is respectfully requested.

The failure of an asserted combination to teach or suggest each and every feature of a claim remains fatal to an obviousness rejection under 35 U.S.C. § 103, despite any recent revision to the MPEP. Section 2143.03 of the MPEP requires the "consideration" of every claim feature in an obviousness determination. To render Claim 1 unpatentable, however, the Office must do more than merely "consider" each and every feature for this claim. Instead, the asserted combination of the patents to Baker and Hausman *must also teach or suggest each and every claim feature*. See In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added). To establish a prima facie case of obviousness under 35 U.S.C. § 103(a), the Examiner must demonstrate that <u>each and every</u> claim limitation is taught or suggested by the cited references, and that a combination of such elements would be obvious to one of ordinary skill in the art. Manual of Patent Examining Procedure (MPEP) § 2143.

Indeed, as the Board of Patent Appeals and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." See In re Wada and Murphy, Appeal 2007-3733, citing In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). Further, the necessary presence of all claim features is axiomatic, since the Supreme Court has long held that "obviousness is a question of law based on underlying factual inquiries, including ... ascertaining the differences between *the claimed invention* and the prior art." Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) (emphasis added).

Indeed, Applicants submit that this is why MPEP § 904 instructs Examiners to conduct an art search that covers "the invention *as described and claimed.*" (emphasis added). Lastly, Applicants respectfully direct attention to MPEP § 2143, the instructions of which buttress the conclusion that obviousness requires at least a suggestion of all of the features of a claim, since the Supreme Court in KSR Int'l v. Teleflex Inc. stated that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR Int'l v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007) (quoting In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006).

In sum, it remains well-settled law that obviousness requires at least a suggestion of all of the features in a claim. See In re Wada and Murphy, citing CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) and In re Royka, 490 F.2d 981, 985 (CCPA 1974)).

6. Even if the Combination of Baker and Hausman Teaches or Suggests Each and Every Claim Feature, it Would Not Be Obvious to So Combine

According to the reasoning which is to be applied per the most recent revision of the MPEP:

> The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR International Co. v. Teleflex Inc., 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also KSR, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

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The Examiner's reasoning appears to fit best under the rational discuss under part (G) of that section.

(G) Some Teaching, Suggestion, or Motivation in the Prior Art That Would Have Led One of Ordinary Skill To Modify the Prior Art Reference or To Combine Prior Art Reference Teachings To Arrive at the Claimed Invention (Emphasis added)

To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

(1) a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;

(2) a finding that there was reasonable expectation of success; and

(3) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

The rationale to support a conclusion that the claim would have been obvious is that "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success." DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356, 1360, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006). If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.

Id.

The Office Action states on page 5 that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Hausman's method of filtering data as a subcomponent to Baker's data streamer because "it is well known to one of ordinary skill that filtering provides customized distribution of data and also descreases...the amount of information sent across the network." While that assertion is true with respect to the teachings of Hausman, it still does not indicate why one of ordinary skill in the art would be motivated to modify Baker with the teachings of Hausman. The Office Action is further deficient for failing to indicate how such a combination would have had a reasonable expectation of success. Because the Office Action is so deficient, and fails to clearly articulate the reason(s) why the claimed invention would have been obvious, the Office Action fails to set out a prima facie case of obviousness.

Further, one of ordinary skill in the art would not be motivated to combine the Baker and Hausman references. MPEP § 2143.01(I)(V) states, "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." In this case, by combining the Baker and Hausman references, the Baker system fails for its intended purpose. Specifically, Baker's data streamer is employed for predetermined data movements within a multimedia processor (col. 5, lines 58-59). That is, Baker's data streamer specifically supports data transfer between memory or input/output (I/O) devices. In contrast, Hausman relates to distribution of data streams between computer systems in a network (paragraph [0005]). Individual users of applications accessed on terminals on the network have the capability to select data from one or more feeds provided via the network. Thus, if one skilled in the art combines the data selection of Hausman with the data streamer of Baker, Baker fails to deliver all data from the source, such as the memory. Further, Baker's data streamer supports data movements on predetermined paths. In contrast, Hausman teaching selection of data to be provided over the network to a user at a terminal. Accordingly, the proposed modification of Hausman renders Baker unsatisfactory for its intended purpose. That is, Baker's providing of buffered data movements within a multimedia processor cannot be executed by using the customized data distribution of Hausman. Therefore, in accordance with MPEP § 2143.01(I)(V), as presented above, Applicants respectfully submit that the combination of Baker and Hausman fails to achieve the basic requirements of a prima facie case of obviousness and as such there is no motivation to combine the references. Accordingly, Applicants respectfully submit that the rejection of Claim 1 under 35 U.S.C. 103 (a) should be withdrawn. Reconsideration is respectfully requested.

7. Claim Rejections

With regard to the Examiner's rejection of Claim 1, as stated above, the Examiner has failed to meet the burden of showing a prima facie case of obviousness and has not shown it was obvious to combine the references. Baker/Hausman does not overcome any of the deficiencies of Baker. Therefore, the rejection of Claim 1, and Claims 2-14 which depend from it, should be withdrawn and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claims 3 and 4, Baker/Hausman does not overcome any of the deficiencies of Baker and discloses neither a Transaction Identifier nor TID processing, let alone TID processing and data engine logic being executed in parallel. Further, Claims 3 and 4 are dependent on Claim 1 and contain all the elements of the base claim. Therefore, the rejection of Claims 3 and 4 should be withdrawn and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 6, Baker/Hausman does not overcome any of the deficiencies of Baker and fails to disclose not asserting the use or lose decision value when a buffer local to the programmable data streaming processor is full; and means for appending an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored. The value of the valid bit used in Baker indicates whether the specific byte is valid or not. Baker does not, however, not assert a use/lose decision value when a buffer local to the programmable data streaming processor is full and make no use of an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored. Baker/Hausman does not teach the use of tuples. Further, Claim 6 is dependent on Claim 1 and contains all the elements of the base claim. Therefore, the rejection of Claim 6 should be withdrawn and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claims 9 and 10, Baker/Hausman does not overcome any of the deficiencies of Baker and discloses neither an overflow filter bit nor tuples, let alone an invalid field appended to a tuple or such an overflow filter bit inserted in a length field appended to record fragments. Further, Claims 9 and 10 are dependent on Claim 1 and contain all the elements of the base claim. Therefore, the rejection of Claims 9 and 10 should be withdrawn and reconsideration is respectfully requested.

With regard to the Examiner's rejections of Claims 2, 5, 7-8 and 11-14, Baker/Hausman does not overcome any of the deficiencies of Baker. Further, Claims 2, 5, 7-8 and 11-14 are either directly or indirectly dependent on Claim 1 and contain all the elements of the base claim. Therefore, the rejection of Claims 2, 5, 7-8 and 11-14 should be withdrawn and reconsideration is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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